

11/11/2015

السنة / الفصل

م.م

[5] سنة

Conti. sheet 4

[8]  $x a. a^x b^y$   $x = y$

$S \rightarrow a S b \mid \epsilon$

\*  $b. a^x b^y$   $x > y$

$S \rightarrow a E$

$E \rightarrow a E \mid \epsilon \mid a E b$

\*  $c. a^x b^y$   $x = 2y$

$S \rightarrow a a S b \mid \epsilon$

\*  $d. a^x b^y a^z$   $z = x + y$

$S \rightarrow a S a \mid L$

$L \rightarrow b L a \mid \epsilon$

\*  $e. a^x b^y a^z$   $z = x - y$

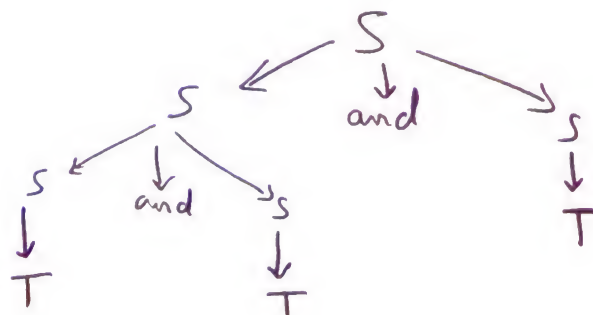
$S \rightarrow a S b \mid L$   $x = z + y$

$L \rightarrow b L a \mid \epsilon$

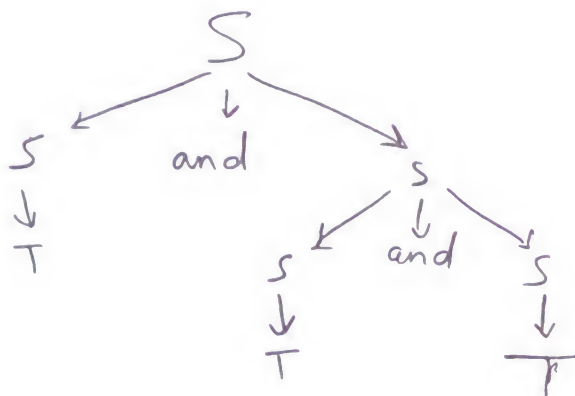
[9]  $S \rightarrow S \text{ and } S \mid \text{true}$

"true and true and true"

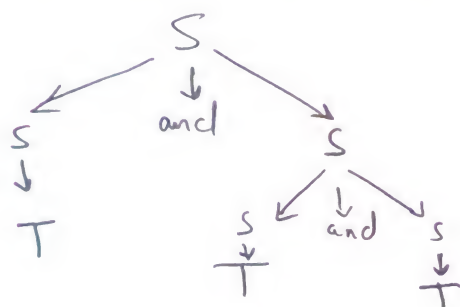
①  $S \Rightarrow S \text{ and } S \Rightarrow S \text{ and } S \text{ and } S \Rightarrow \text{True and } S \text{ and } S$   
 $\Rightarrow \text{True and True and } S \Rightarrow \text{True and True and True}$



②  $S \Rightarrow S \text{ and } S \Rightarrow \text{true and } S \Rightarrow \text{true and } S \text{ and } S$   
 $\Rightarrow \text{true and true and } S \Rightarrow \text{true and true and true}$

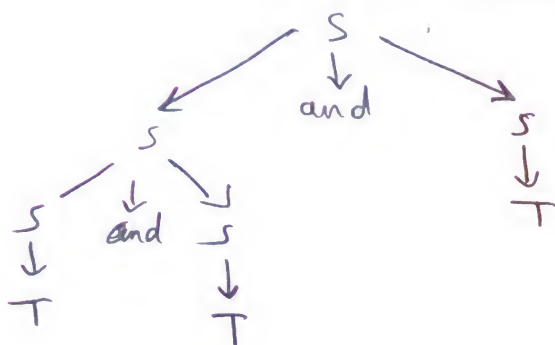


③  $S \Rightarrow S \text{ and } S \Rightarrow S \text{ and } S \text{ and } S \Rightarrow S \text{ and } S \text{ and True}$   
 $\Rightarrow S \text{ and true and true} \Rightarrow \text{true and true and true}$



Same as ②

④  $S \Rightarrow S \text{ and } S \Rightarrow S \text{ and true} \Rightarrow S \text{ and } S \text{ and true}$   
 $\Rightarrow S \text{ and true and true} \Rightarrow \text{true and true and true}$

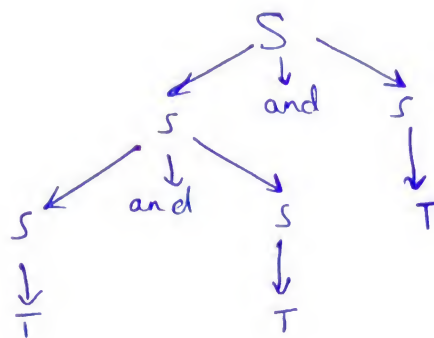


Same as ①

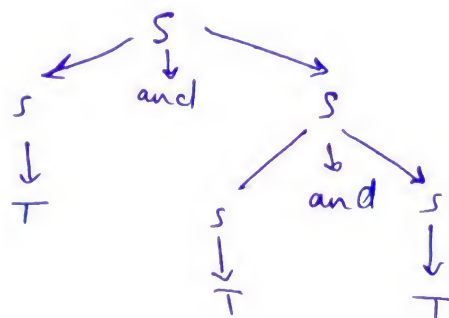
① and ② are left most derivations

③ and ④ are right most derivations

for ①, ④ tree is  
left associative  
(T and T) and T

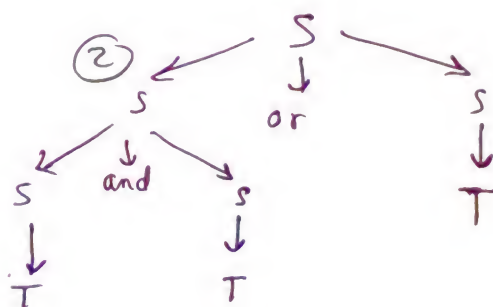
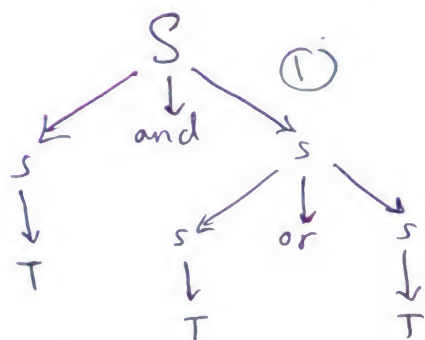


for ②, ③ tree is  
right associative  
T and (T and T)



⑩  $S \rightarrow S \text{ and } S \mid S \text{ or } S \mid \text{true}$   
"true and true or true"

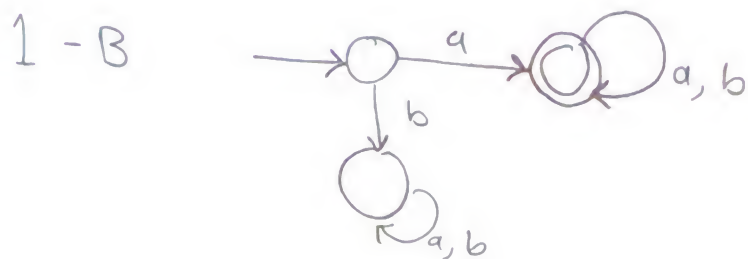
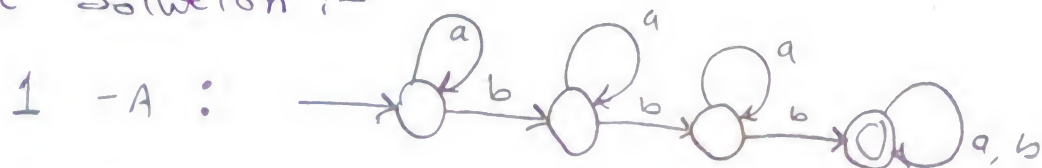
i)



ii) for ① (or) has higher precedence than (and)  
for ② (and) < = = = (or)

iii)  $S \rightarrow S \text{ or } S \mid L$   
 $L \rightarrow \text{true and } L \mid \text{true}$

Quiz Solution :-

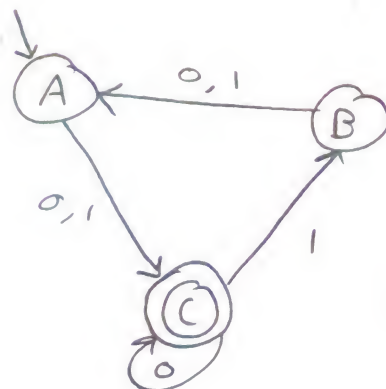


2 - A



$(1+0)^* 1$   
 $0^* 1 (1+0^* 1)^*$

2 - B



$(0+1)(0+1(0+1)(0+1))^*$